

FIG. 1

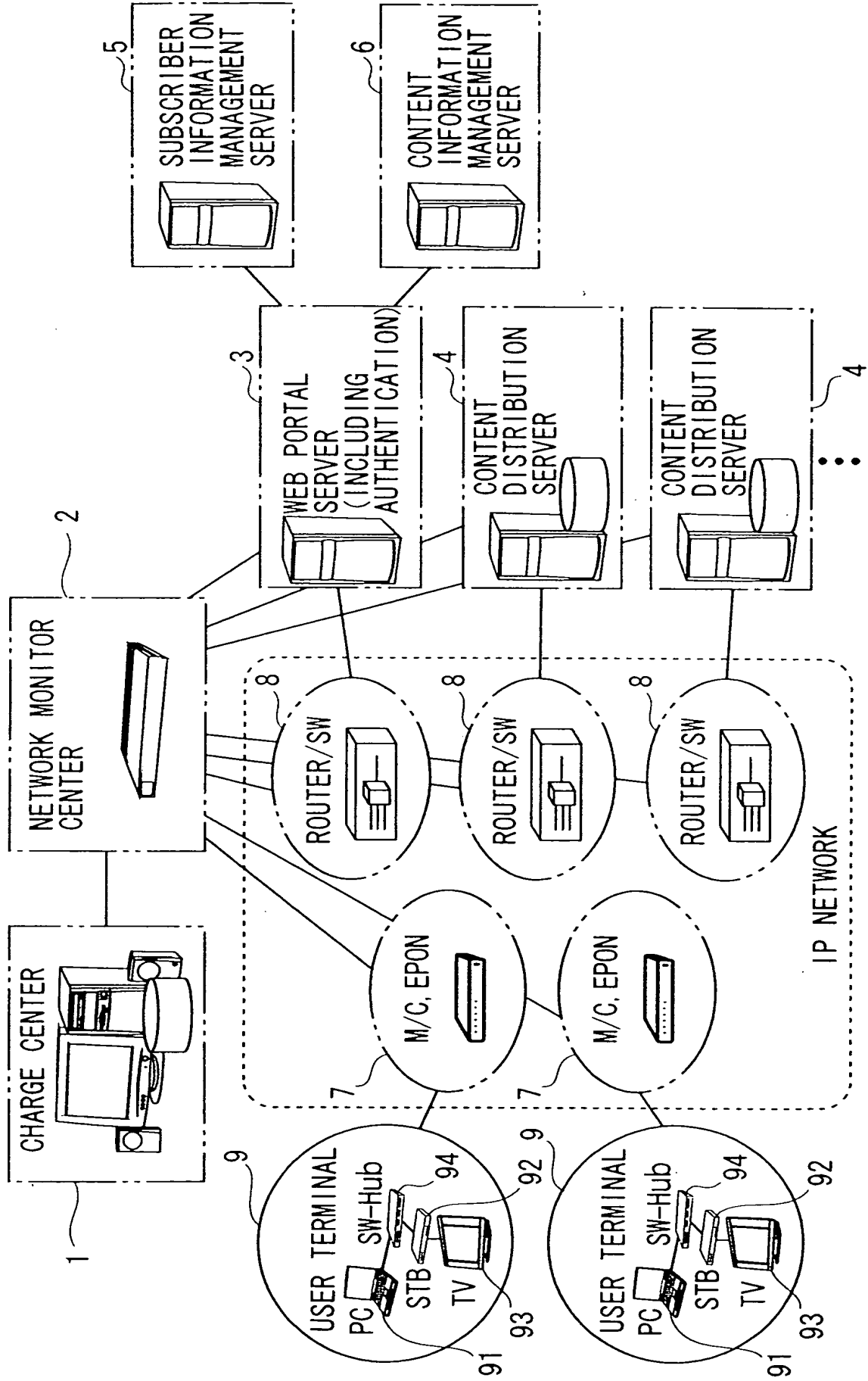


FIG. 2

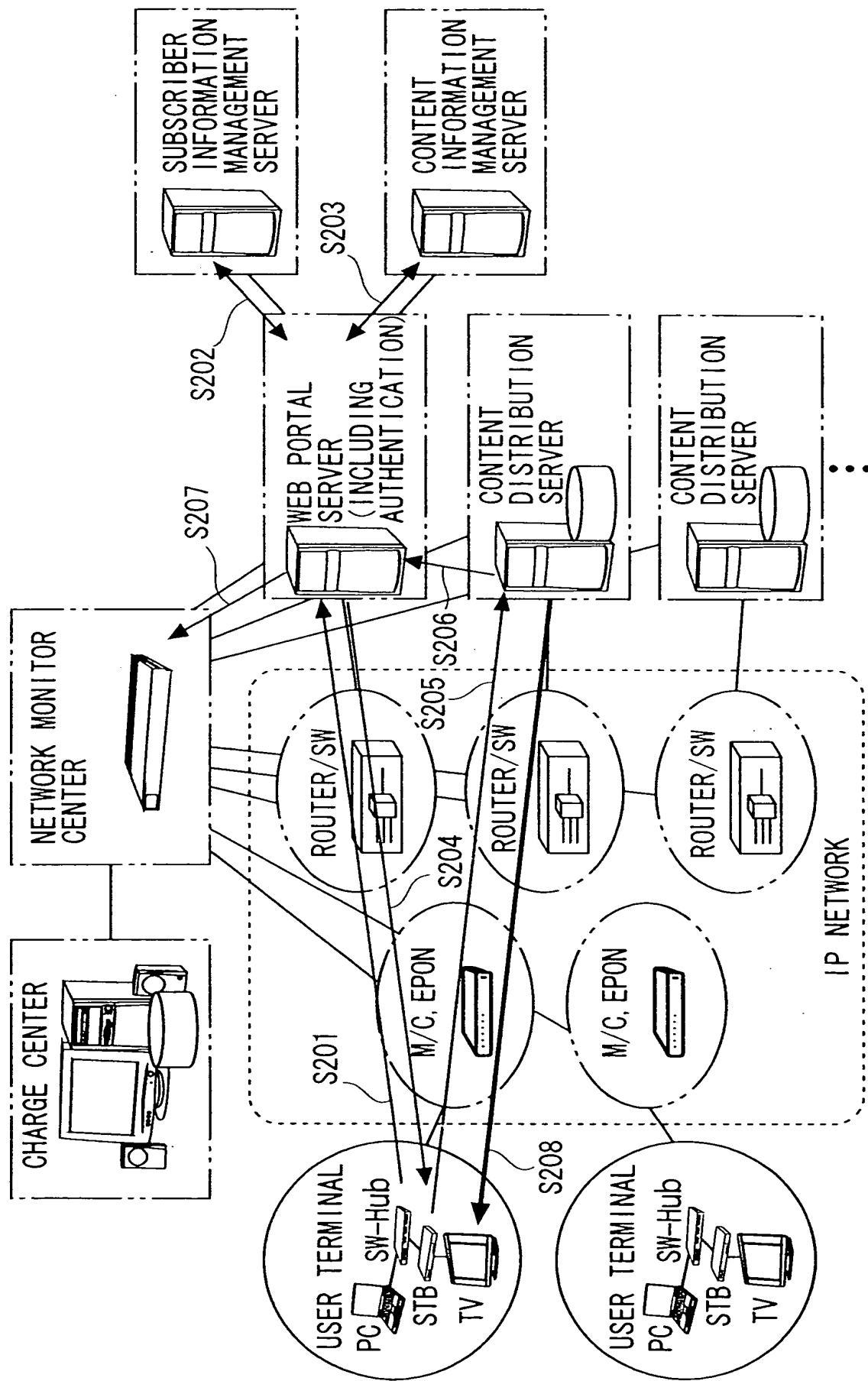


FIG. 3

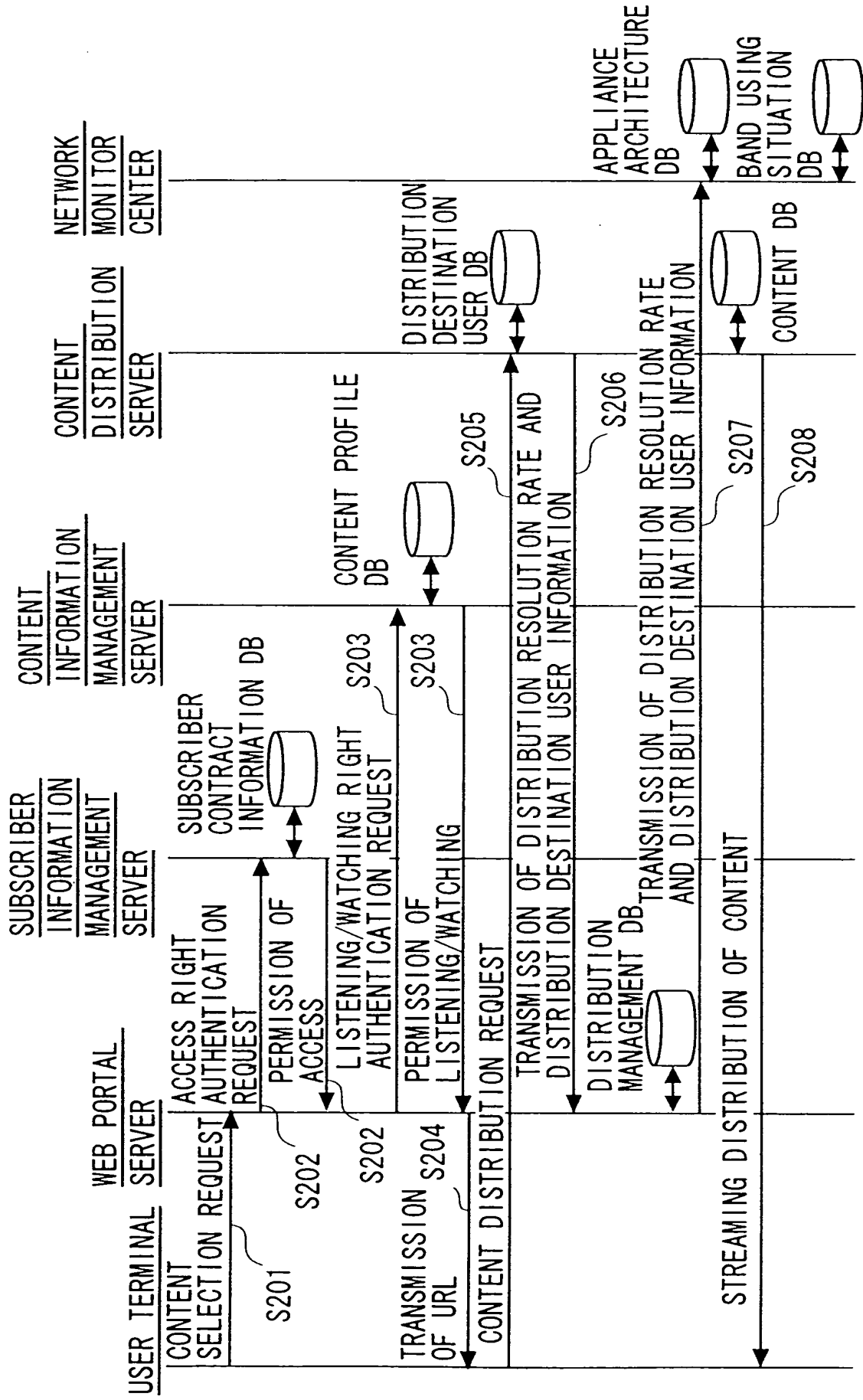
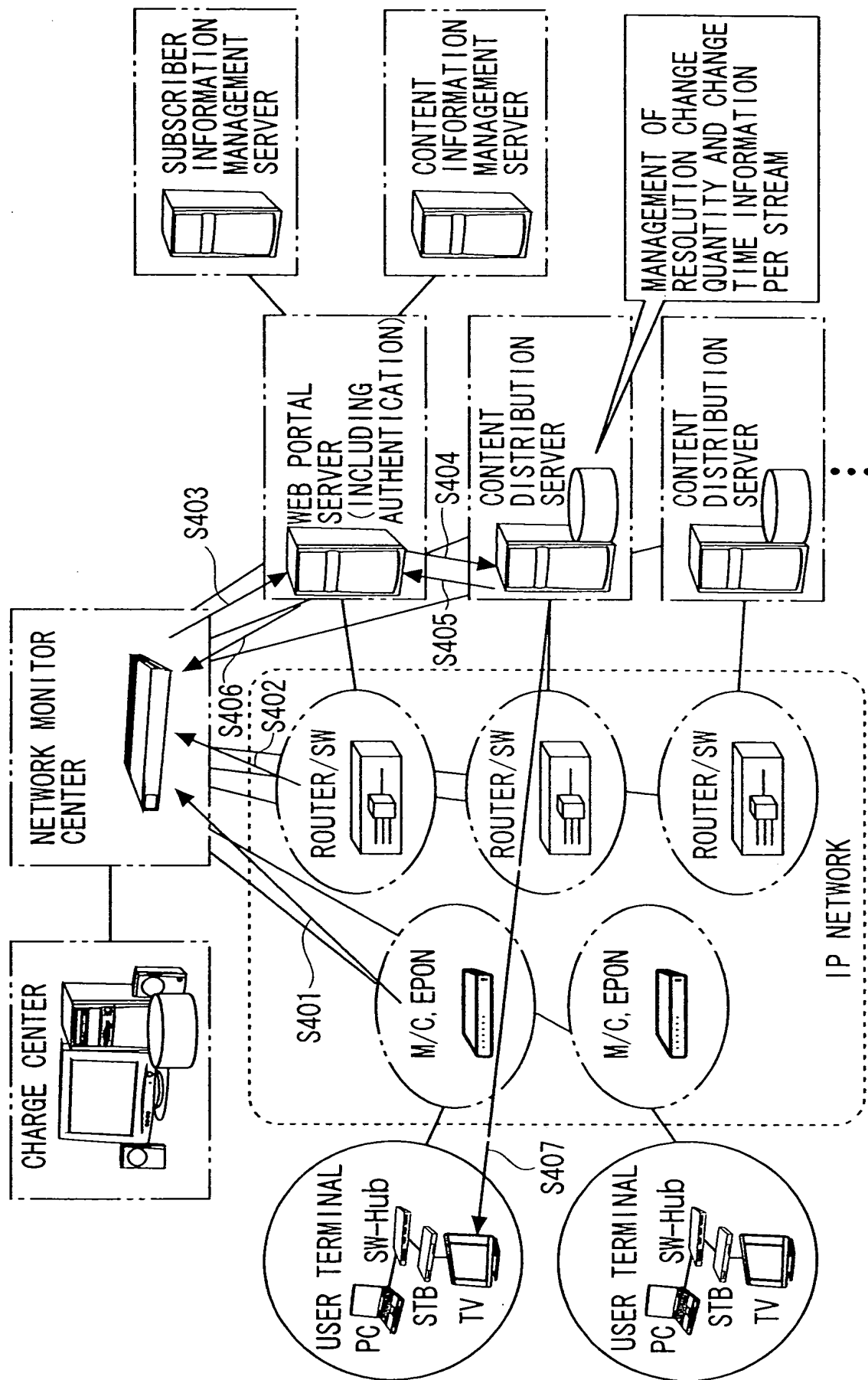


FIG. 4



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sequenceDiagram
    participant UT as USER TERMINAL
    participant RS as ROUTER/SW
    participant WPS as WEB PORTAL SERVER
    participant CDS as CONTENT DISTRIBUTION SERVER
    participant NMC as NETWORK MONITOR CENTER

    Note over UT, RS: STREAMING DISTRIBUTION OF CONTENT
    RS->>WPS: S401 NOTIFICATION OF USING BAND SITUATION
    Note over WPS, NMC: S402 NOTIFICATION OF USING BAND SITUATION
    WPS->>CDS: S403 NOTIFICATION OF ROUTE INFORMATION
    Note over CDS, NMC: S404 REQUEST FOR DISTRIBUTION RESOLUTION RATE ADJUSTMENT
    CDS->>NMC: S405 NOTIFICATION OF CHANGE IN DISTRIBUTION RESOLUTION RATE
    Note over NMC: CHANGE OF DISTRIBUTION RESOLUTION RATE SYSTEM IS MADE
    NMC->>CDS: S406 TRANSMISSION OF DISTRIBUTION RESOLUTION RATE AND DISTRIBUTION DESTINATION USER INFORMATION
    Note over CDS, RS: S407
    CDS->>RS: S407
    
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The diagram illustrates a sequence of operations for adjusting the distribution resolution rate. It involves five main entities: USER TERMINAL, ROUTER/SW, WEB PORTAL SERVER, CONTENT DISTRIBUTION SERVER, and NETWORK MONITOR CENTER. The process begins with the ROUTER/SW sending a notification (S401) to the WEB PORTAL SERVER. The WEB PORTAL SERVER then notifies the CONTENT DISTRIBUTION SERVER (S402). The CONTENT DISTRIBUTION SERVER sends route information (S403) to the NETWORK MONITOR CENTER. A request for adjustment (S404) is then made. The NETWORK MONITOR CENTER notifies the CONTENT DISTRIBUTION SERVER of a change in the resolution rate (S405). A change in the system is then made. The NETWORK MONITOR CENTER transmits the new resolution rate and destination user information (S406) back to the CONTENT DISTRIBUTION SERVER. Finally, the CONTENT DISTRIBUTION SERVER sends a message (S407) back to the ROUTER/SW.

FIG. 6

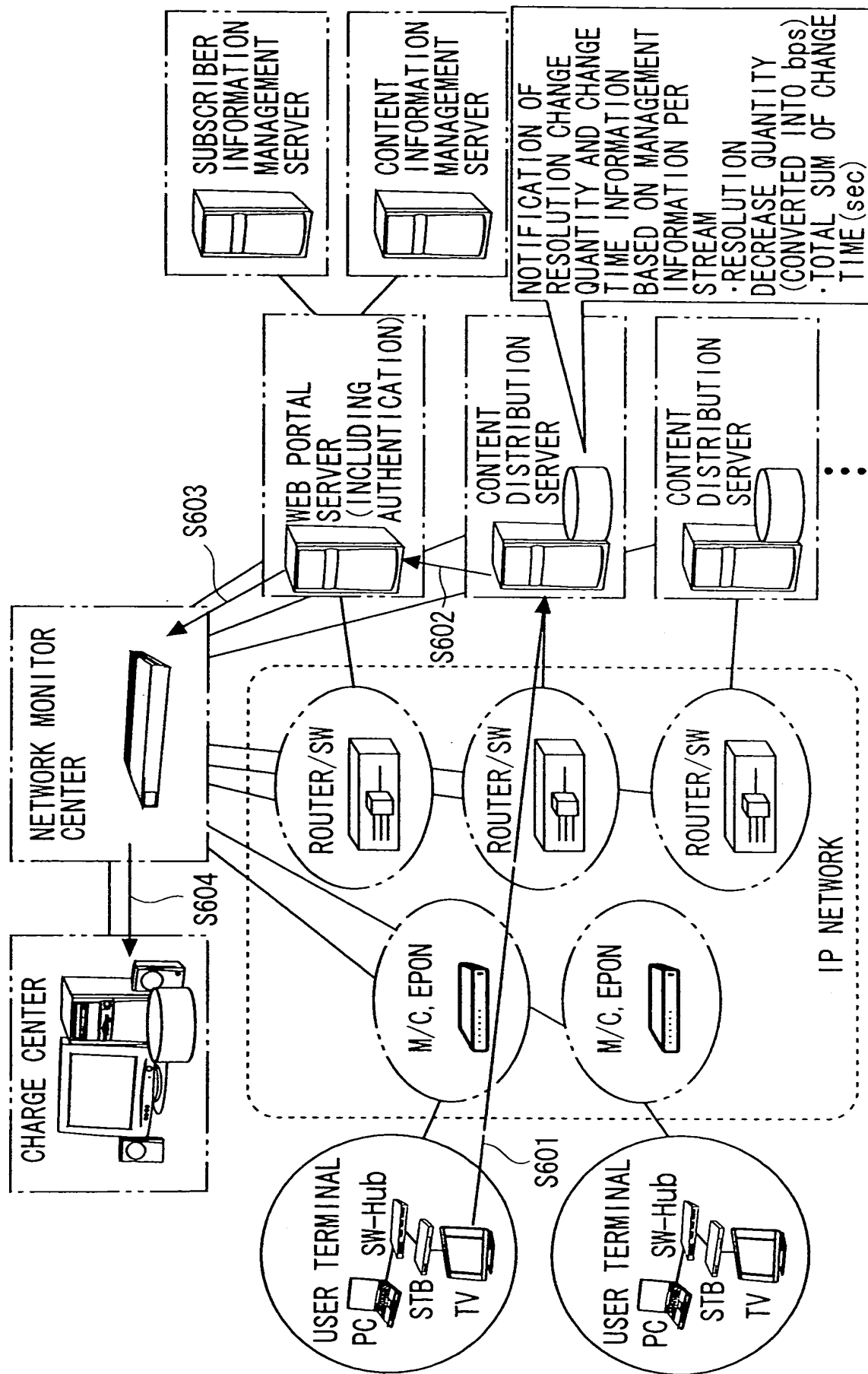


FIG. 7

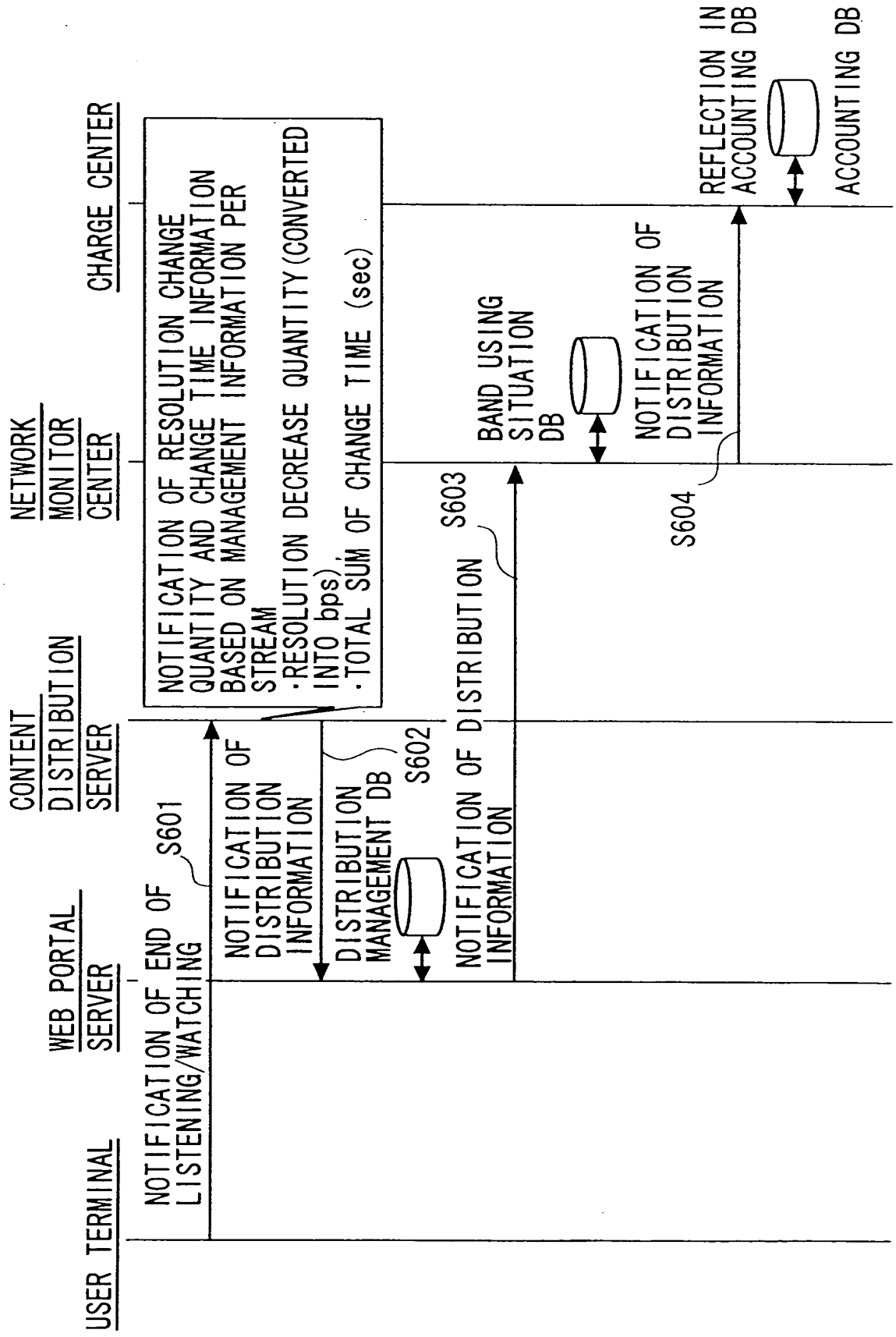
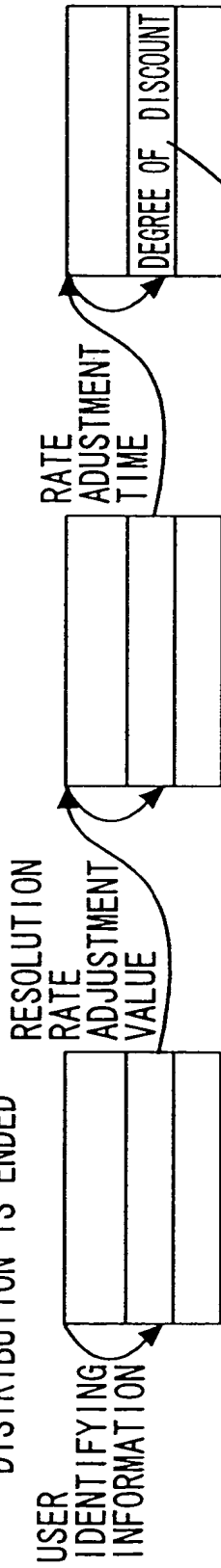


FIG. 8

「CHARGE CENTER」 CALCULATES DEGREE OF DISCOUNT PER STREAMING DISTRIBUTION, AND ADDS ACCUMULATES AND MANAGES CALCULATED DEGREE PER USER. DISCOUNT RATE IS CALCULATED FROM VALUE OF DEGREE ON EVERY CHARGE COLLECTION UNIT (E.G., CLOSE AT END OF EVERY MONTH) AND IS REFLECTED IN COLLECTION OF CHARGE.

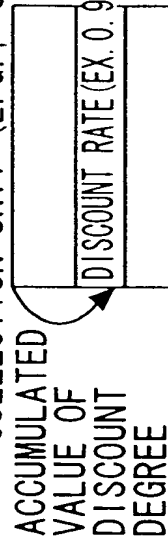
- (1) CALCULATE DEGREE OF DISCOUNT WITH FOLLOWING MANAGEMENT DATA EACH TIME STREAMING DISTRIBUTION IS ENDED



- (2) ACCUMULATION AND MANAGEMENT OF DEGREE OF DISCOUNT CALCULATED PER USER



- (3) CONVERT INTO DISCOUNT RATE FROM ACCUMULATED DISCOUNT DEGREE ON EVERY CHARGE COLLECTION UNIT (E.G., CLOSE AT END OF EVERY MONTH), AND DETERMINE COLLECTION CHARGE



→ EX. MONTHLY USER CONTRACT CHARGE 0.98 = MONTHLY COLLECTION CHARGE

FIG. 9

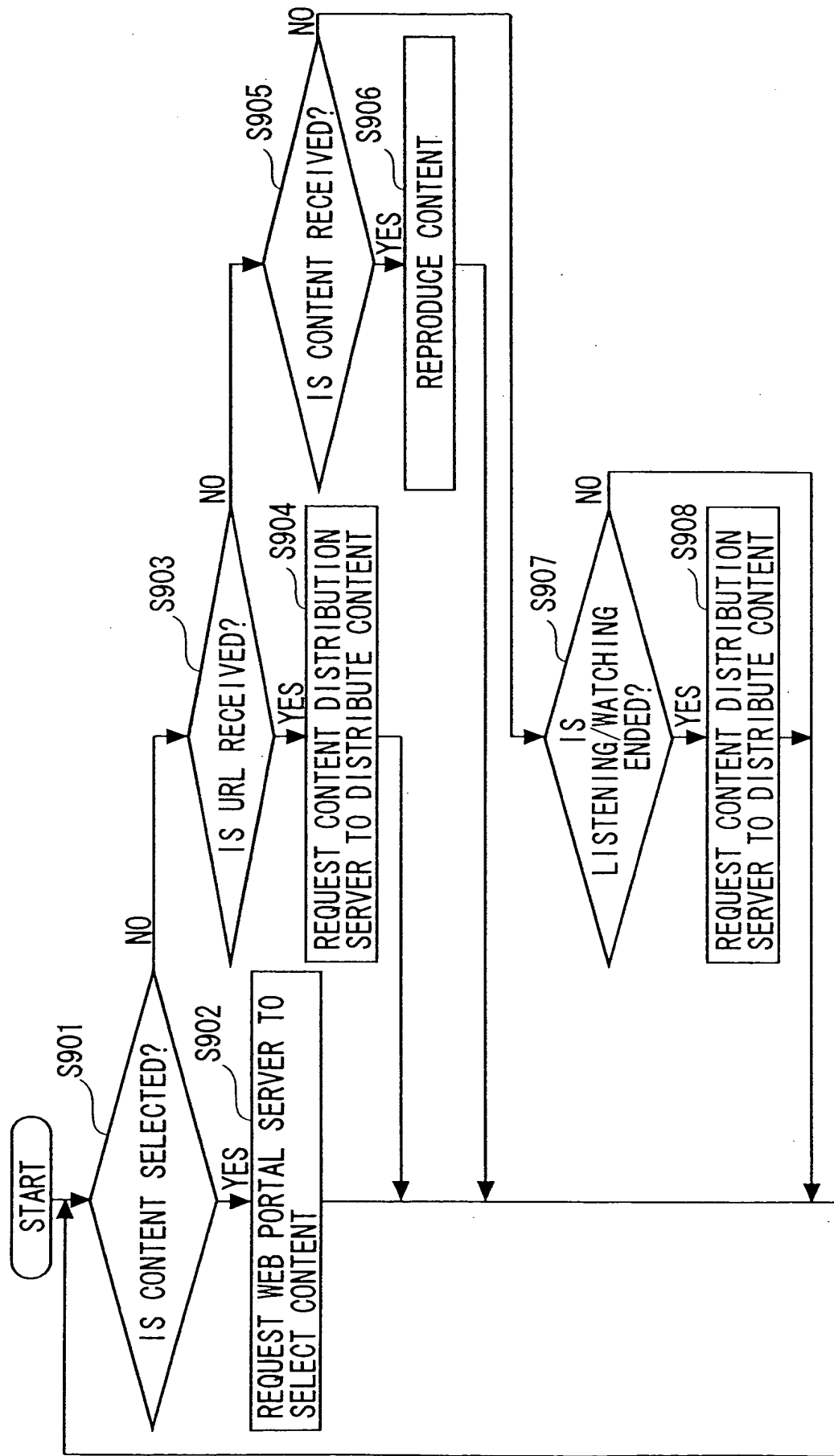


FIG. 10

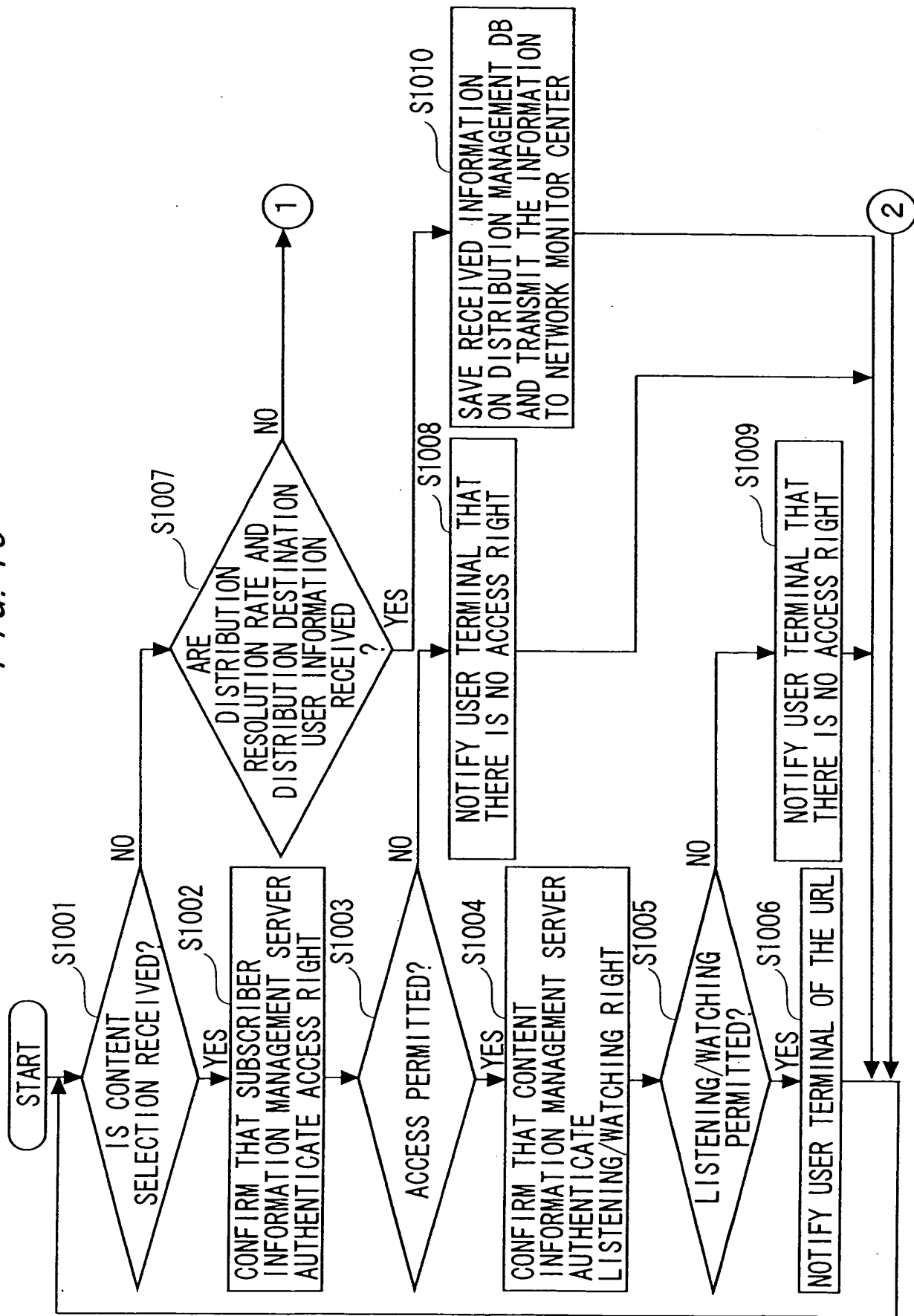


FIG. 11

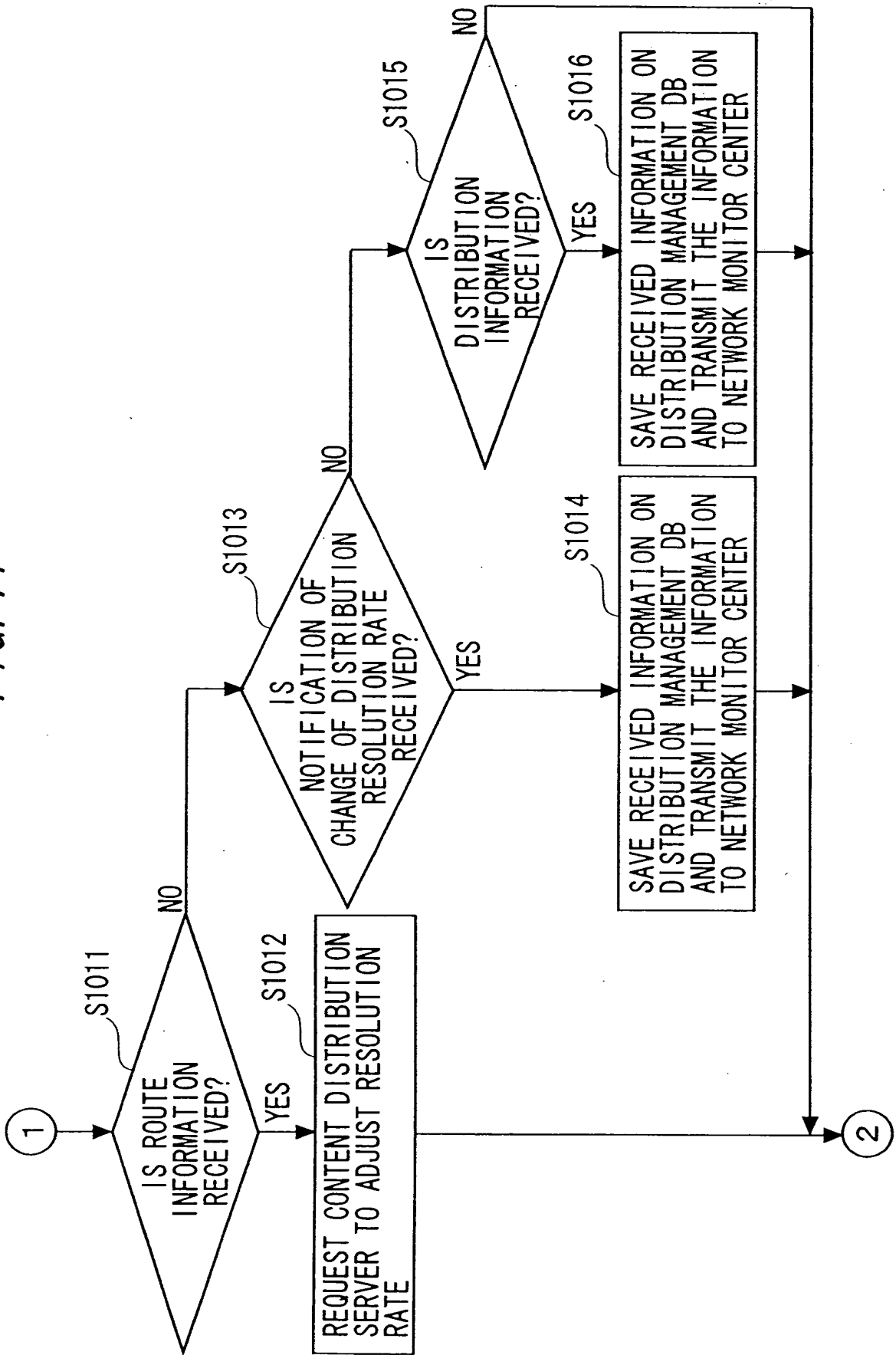


FIG. 12

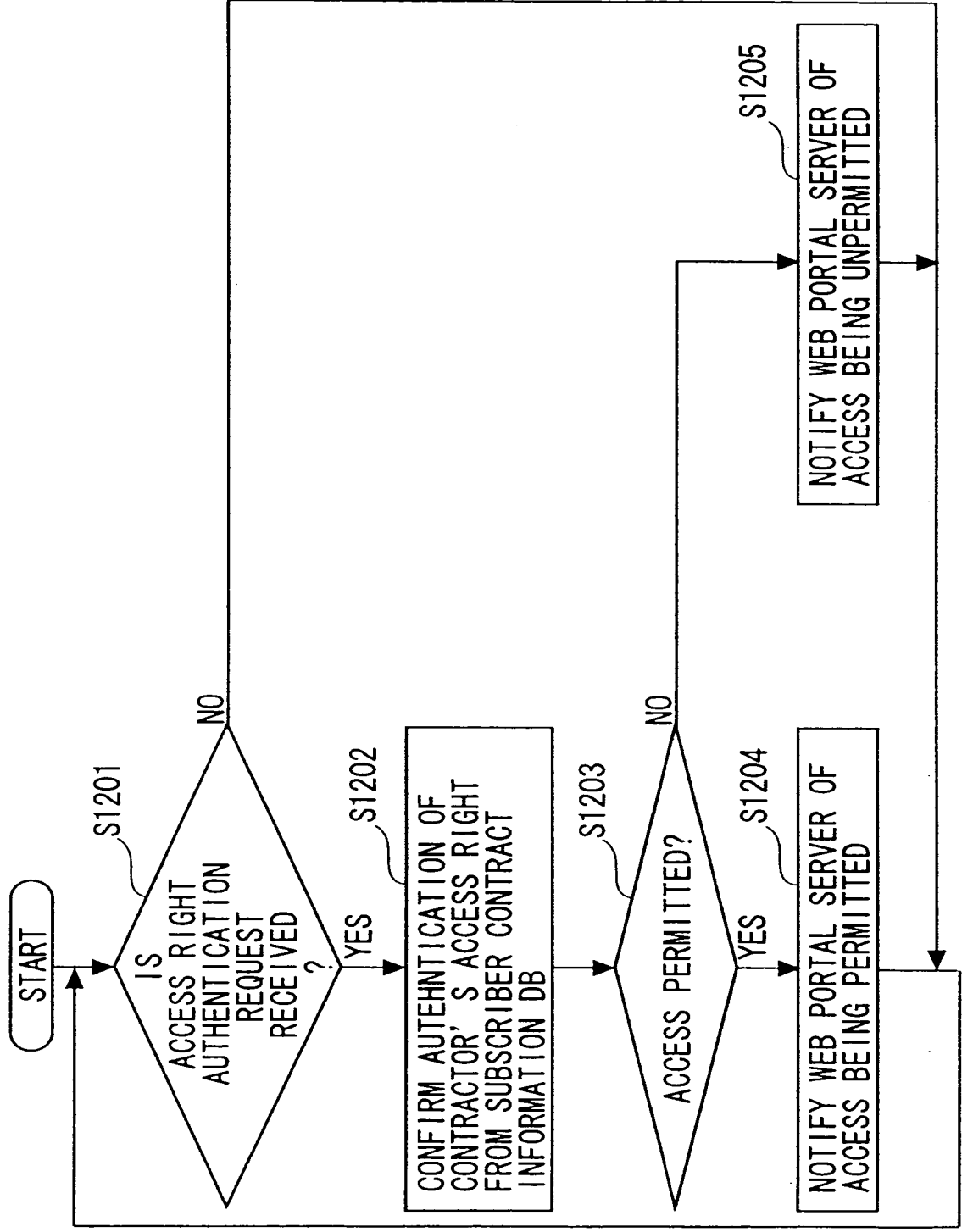


FIG. 13

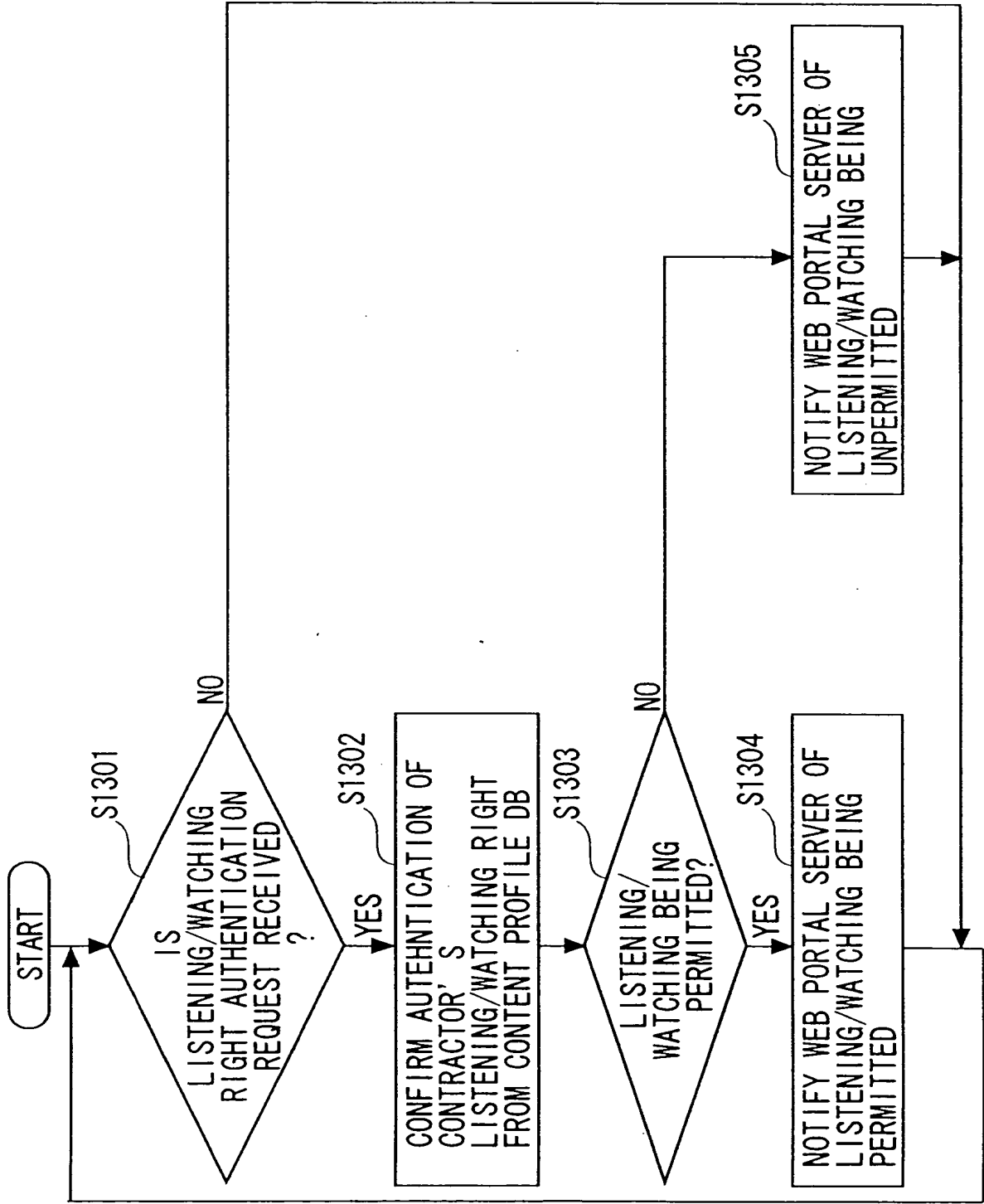


FIG. 14

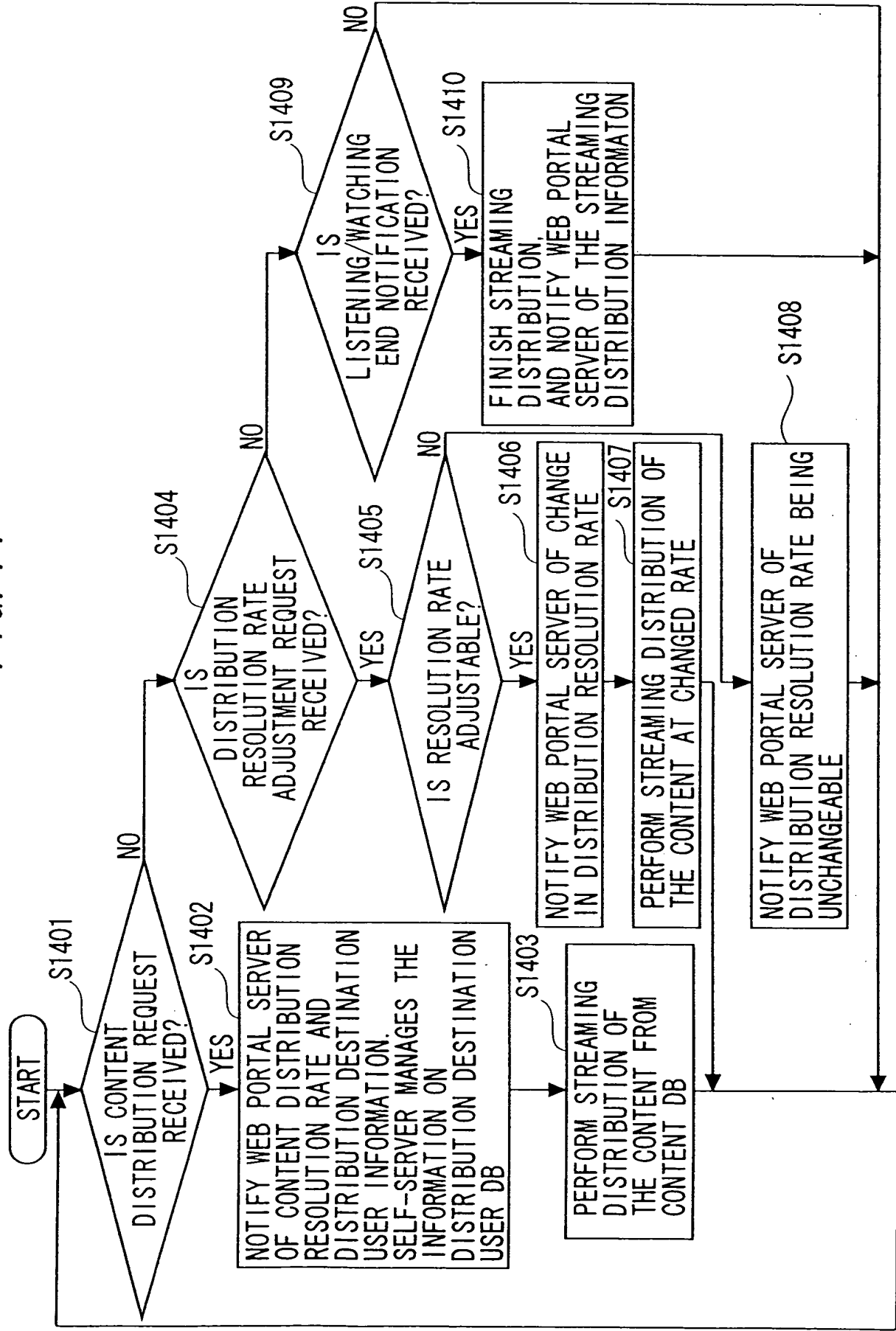


FIG. 15

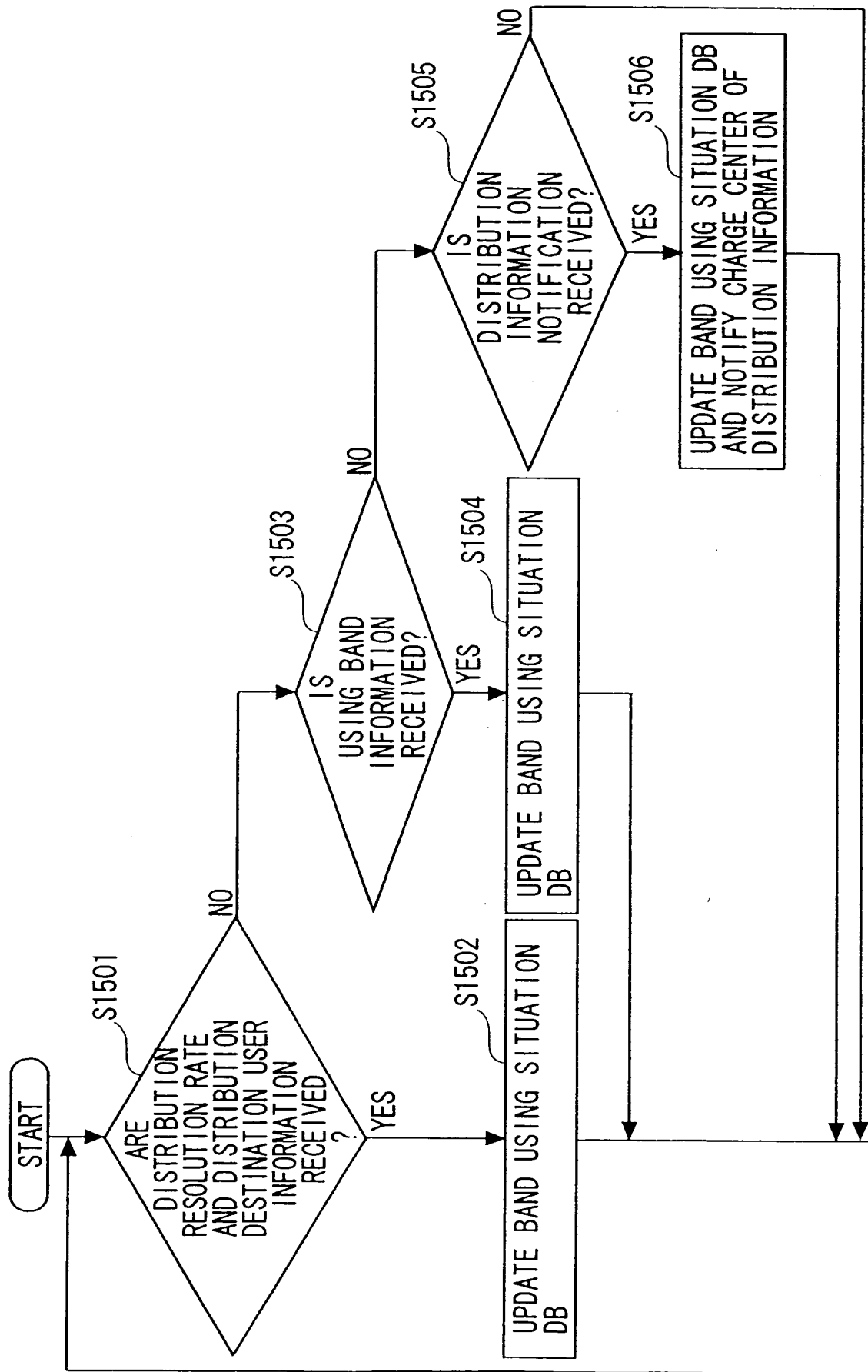


FIG. 16

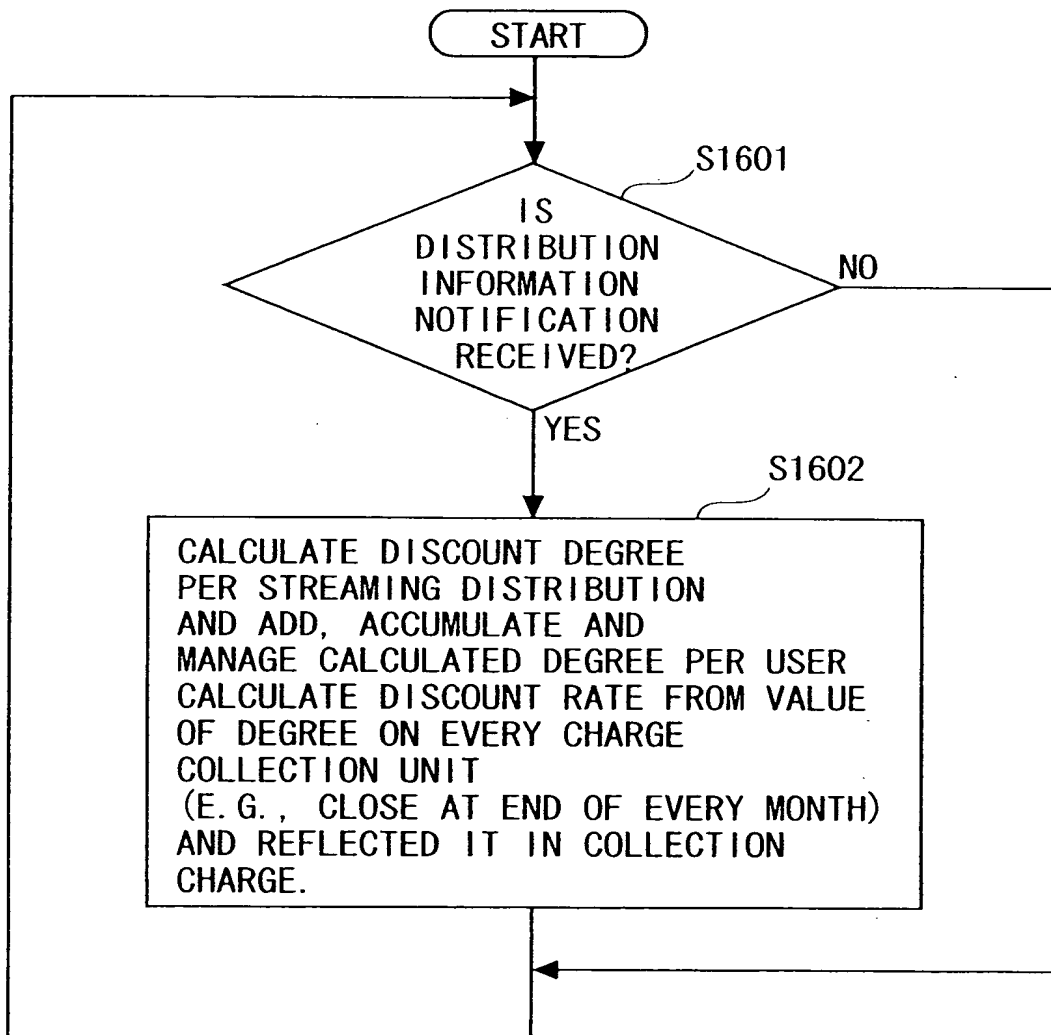


FIG. 17

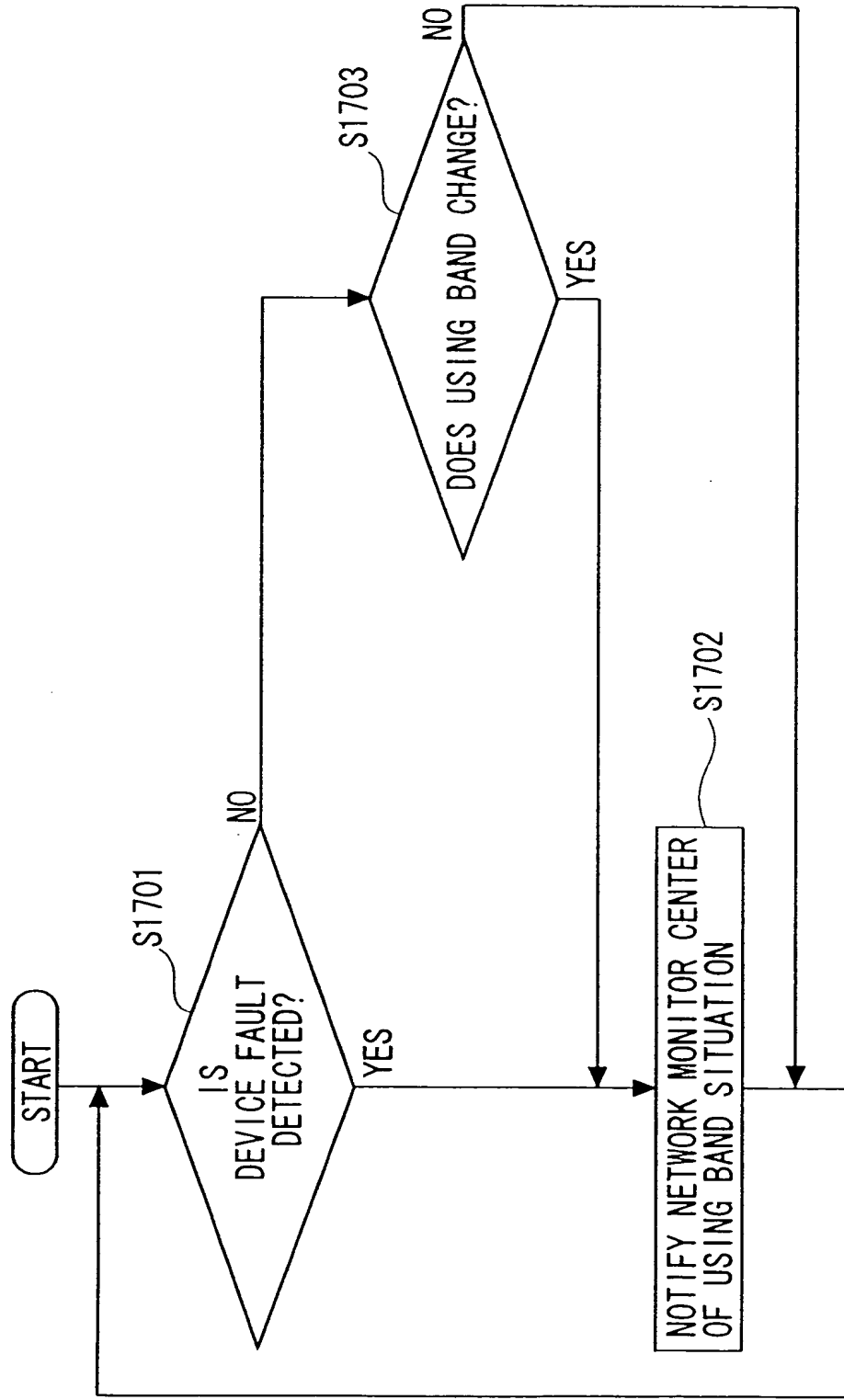


FIG. 18

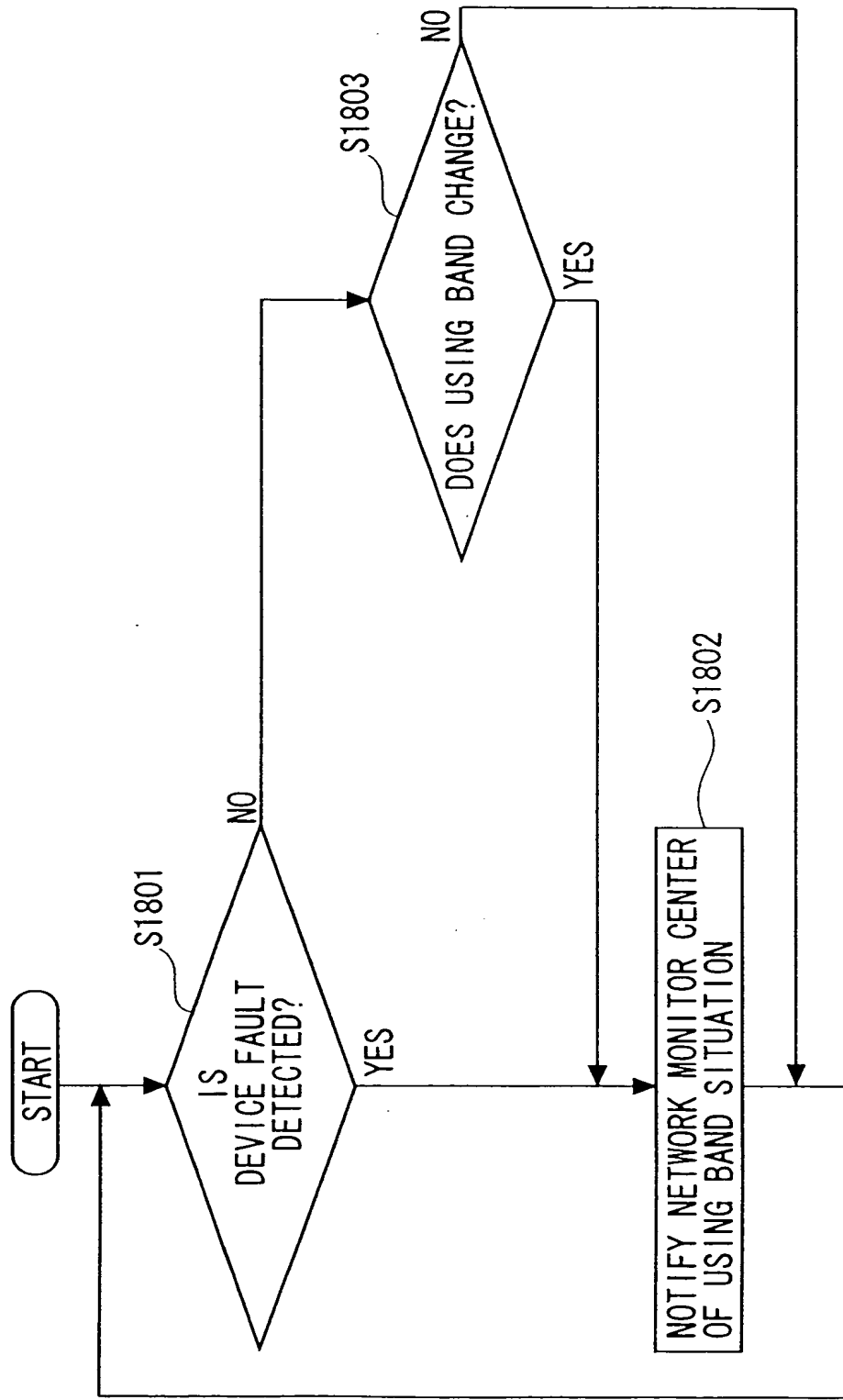


FIG. 19

1. USER TERMINAL→WEB PORTAL SERVER
S201 CONTENT SELECTION REQUEST

IDENTIFICATION NUMBER (1)	CONTENT SELECTION NUMBER
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CONTENT SELECTION NUMBER 0~n

2. USER TERMINAL→CONTENT DISTRIBUTION SERVER
S205 CONTENT DISTRIBUTION REQUEST

IDENTIFICATION NUMBER (2)	URL	CONTENT NUMBER	CONTENT NUMBER 0~n
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S601 NOTIFICATION OF END OF LISTENING/WATCHING

IDENTIFICATION NUMBER (3)	URL	CONTENT NUMBER	CONTENT NUMBER 0~n
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3. WEB PORTAL SERVER→SUBSCRIBER INFORMATION MANAGEMENT SERVER
S202 ACCESS RIGHT AUTHENTICATION REQUEST

IDENTIFICATION NUMBER (1)	USER INFORMATION
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USER INFORMATION (USER ID, USER NAME, ETC.)

4. WEB PORTAL SERVER→CONTENT INFORMATION MANAGEMENT SERVER
S203 LISTENING/WATCHING RIGHT AUTHENTICATION REQUEST

IDENTIFICATION NUMBER (2)	USER INFORMATION
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USER INFORMATION (USER ID, USER NAME, ETC.)

FIG. 20

5. WEB PORTAL SERVER→NETWORK MONITOR CENTER

S207, S406 TRANSMISSION OF DISTRIBUTION RESOLUTION RATE AND DISTRIBUTION DESTINATION

USER INFORMATION

IDENTIFICATION NUMBER (3)	DISTRIBUTION RESOLUTION RATE	DISTRIBUTION DESTINATION USER INFORMATION
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DISTRIBUTION RESOLUTION RATE

(ENCODING INFORMATION,

DISTRIBUTION RATE)

ENCODING INFORMATION 0:MPEG-2 1:MPEG-4

RESOLUTION RATE (64K, 128K, 256K, 512K, 2M, 6M)

USER INFORMATION (USER ID, USER NAME, ETC.)

S603 NOTIFICATION OF DISTRIBUTION INFORMATION

IDENTIFICATION NUMBER (5)	USER IDENTIFYING INFORMATION	RESOLUTION RATE CHANGE QUANTITY	RESOLUTION RATE CHANGE TIME
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USER IDENTIFYING

INFORMATION (USER ID)

RESOLUTION RATE CHANGE

QUANTITY n (bps)

RESOLUTION RATE CHANGE

TIME n (min)

6. WEB PORTAL SERVER→CONTENT DISTRIBUTION SERVER

S404 RESOLUTION RATE ADJUSTMENT REQUEST

IDENTIFICATION NUMBER (4)	DISTRIBUTION RESOLUTION RATE
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DISTRIBUTION RESOLUTION RATE (ENCODING INFORMATION,

DISTRIBUTION RATE)

ENCODING INFORMATION 0:MPEG-2 1:MPEG-4

RESOLUTION RATE (64K, 128K, 256K, 512K, 2M, 6M)

7. SUBSCRIBER INFORMATION MANAGEMENT SERVER→WEB PORTAL SERVER

S202 NOTIFICATION OF ACCESS RIGHT

IDENTIFICATION NUMBER (1)	PERMISSION INFORMATION
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PERMISSION INFORMATION 0:PERMITTED 1:UNPERMITTED

8. CONTENT INFORMATION MANAGEMENT SERVER→WEB PORTAL SERVER

S203 NOTIFICATION OF LISTENING/WATCHING RIGHT

IDENTIFICATION NUMBER (1)	PERMISSION INFORMATION
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PERMISSION INFORMATION 0:PERMITTED 1:UNPERMITTED

FIG. 21

9. CONTENT DISTRIBUTION SERVER→WEB PORTAL SERVER

S206 TRANSMISSION OF DISTRIBUTION RESOLUTION RATE AND DISTRIBUTION DESTINATION USER INFORMATION

IDENTIFICATION NUMBER (1)	DISTRIBUTION RESOLUTION RATE	DISTRIBUTION DESTINATION USER INFORMATION	DISTRIBUTION RESOLUTION RATE (ENCODING INFORMATION, DISTRIBUTION RATE) ENCODING INFORMATION 0:MPEG-2 1:MPEG-4 RESOLUTION RATE (64K, 128K, 256K, 512K, 2M, 6M) USER INFORMATION (USER ID, USER NAME, ETC.)
S405 NOTIFICATION OF DISTRIBUTION RESOLUTION RATE CHANGE			

IDENTIFICATION NUMBER (2)	DISTRIBUTION RESOLUTION RATE	PERMISSION INFORMATION	DISTRIBUTION RESOLUTION RATE (ENCODING INFORMATION, DISTRIBUTION RATE) ENCODING INFORMATION 0:MPEG-2 1:MPEG-4 RESOLUTION RATE (64K, 128K, 256K, 512K, 2M, 6M) PERMISSION INFORMATION 0:PERMITTED 1:UNPERMITTED
S602 NOTIFICATION OF DISTRIBUTION INFORMATION			

IDENTIFICATION NUMBER (3)	USER IDENTIFYING INFORMATION	RESOLUTION RATE CHANGE QUANTITY	RESOLUTION RATE CHANGE TIME	USER IDENTIFYING INFORMATION (USER ID) RESOLUTION RATE CHANGE QUANTITY n (bps) RESOLUTION RATE CHANGE TIME n (min)
10. CONTENT DISTRIBUTION SERVER→USER TERMINAL S208, S407 CONTENT DISTRIBUTION				

IDENTIFICATION NUMBER (4)	STREAMING DATA	STREAMING DATA (MPEG-2 CONTENT, MPEG-4 CONTENT)
11. NETWORK MONITOR CENTER→WEB PORTAL SERVER S403 NOTIFICATION OF ROUTE INFORMATION		

IDENTIFICATION NUMBER (1)	ROUTE INFORMATION	ROUTE INFORMATION (INTER-DEVICE INFORMATION)	USER IDENTIFYING INFORMATION (USER ID) RESOLUTION RATE CHANGE QUANTITY n (bps) RESOLUTION RATE CHANGE TIME n (min)
12. NETWORK MONITOR CENTER→CHARGE CENTER S604 NOTIFICATION OF DISTRIBUTION INFORMATION			
IDENTIFICATION NUMBER (2)	USER IDENTIFYING INFORMATION	RESOLUTION RATE CHANGE QUANTITY	RESOLUTION RATE CHANGE TIME

FIG. 22

13. M/C, EPON→NETWORK MONITOR CENTER
S401 NOTIFICATION OF USING BAND SITUATION

IDENTIFICATION NUMBER (1)	DEVICE INFORMATION	USING BAND SITUATION
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DEVICE INFORMATION (DEVICE ID,
 DEVICE STATE INFORMATION)
 USING BAND INFORMATION n (bps)

14. ROUTER/SW→NETWORK MONITOR CENTER
S402 NOTIFICATION OF USING BAND SITUATION

IDENTIFICATION NUMBER (1)	DEVICE INFORMATION	USING BAND SITUATION
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DEVICE INFORMATION (DEVICE ID,
 DEVICE STATE INFORMATION)
 USING BAND INFORMATION n (bps)

FIG. 23

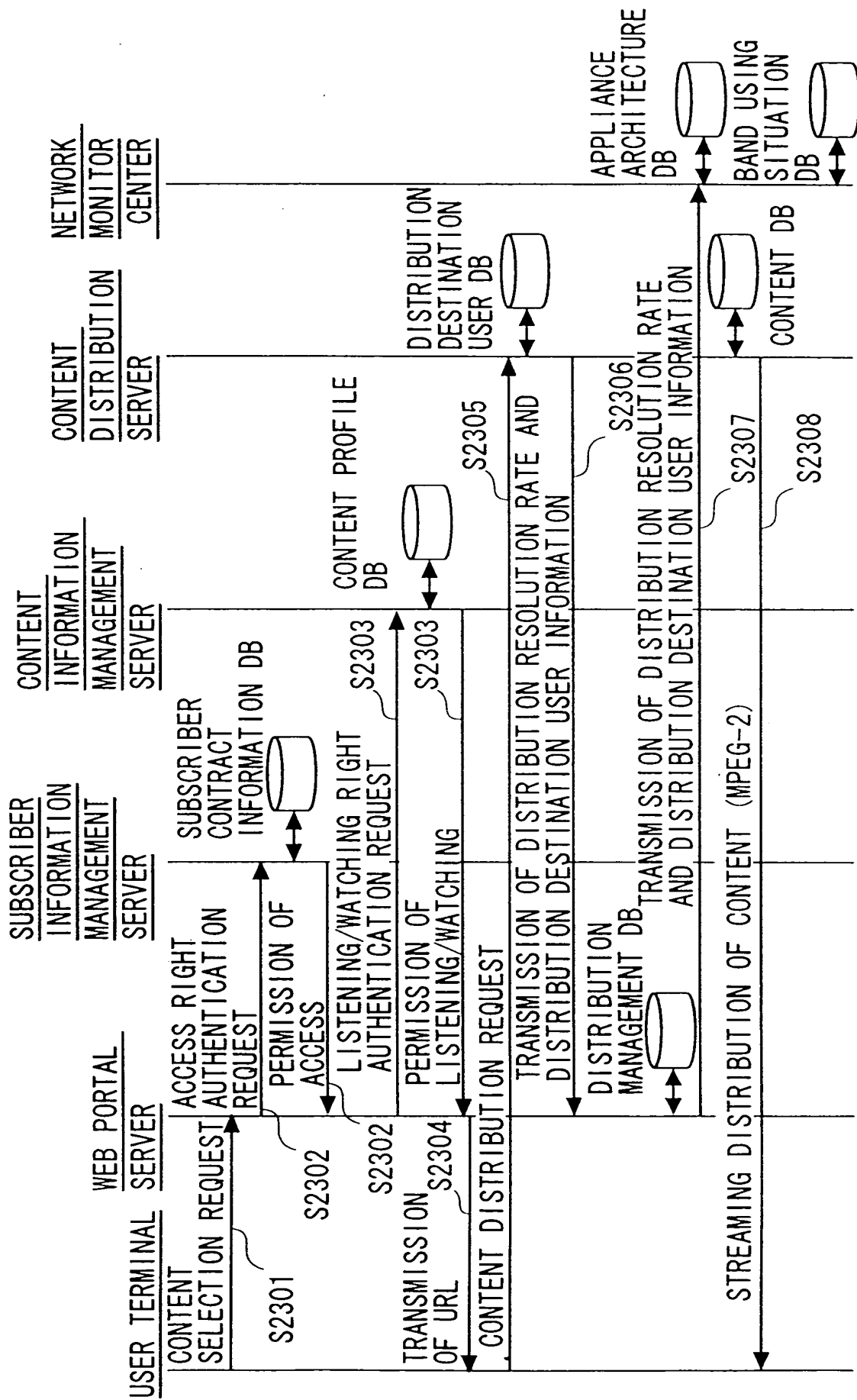


FIG. 24

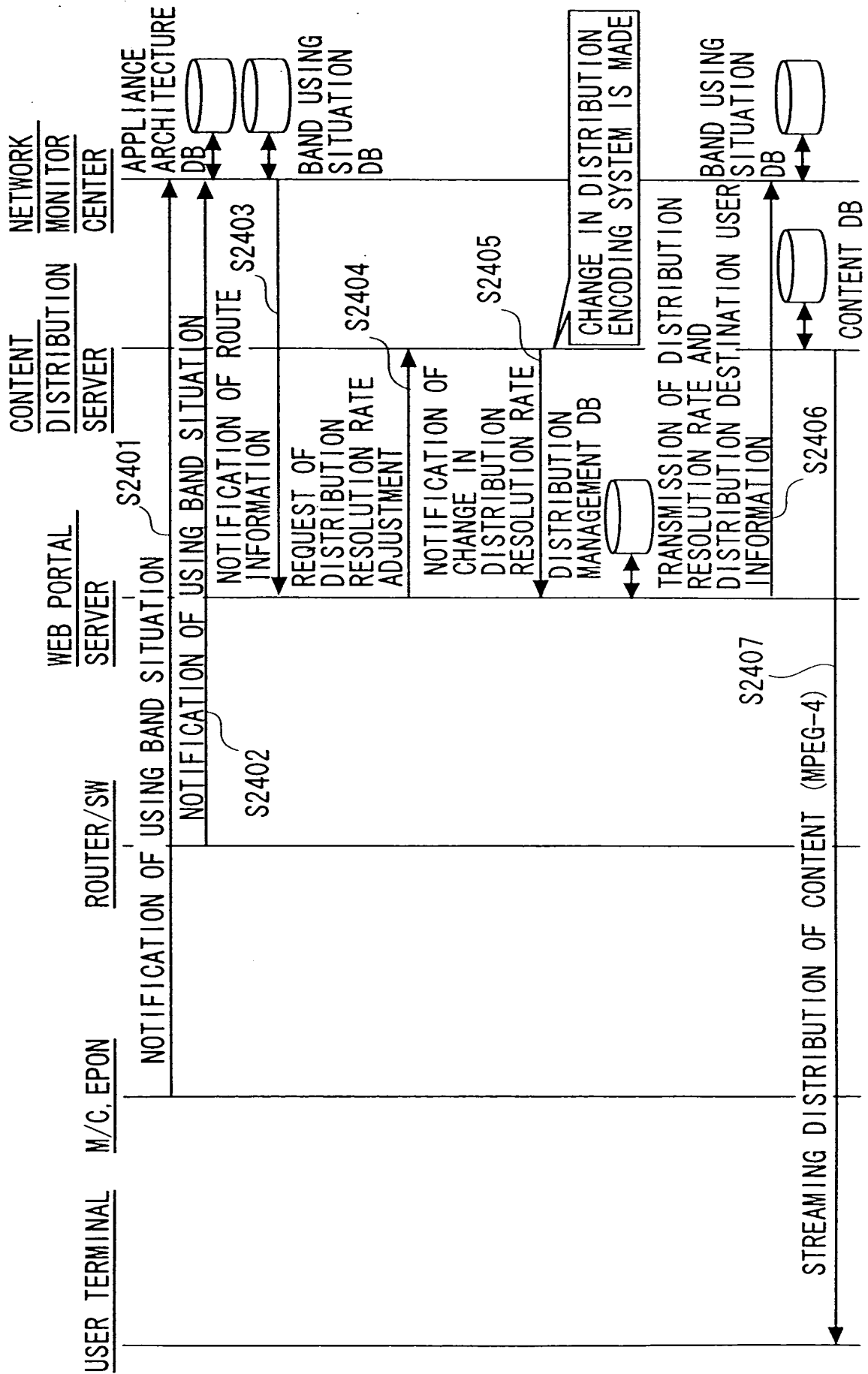


FIG. 25

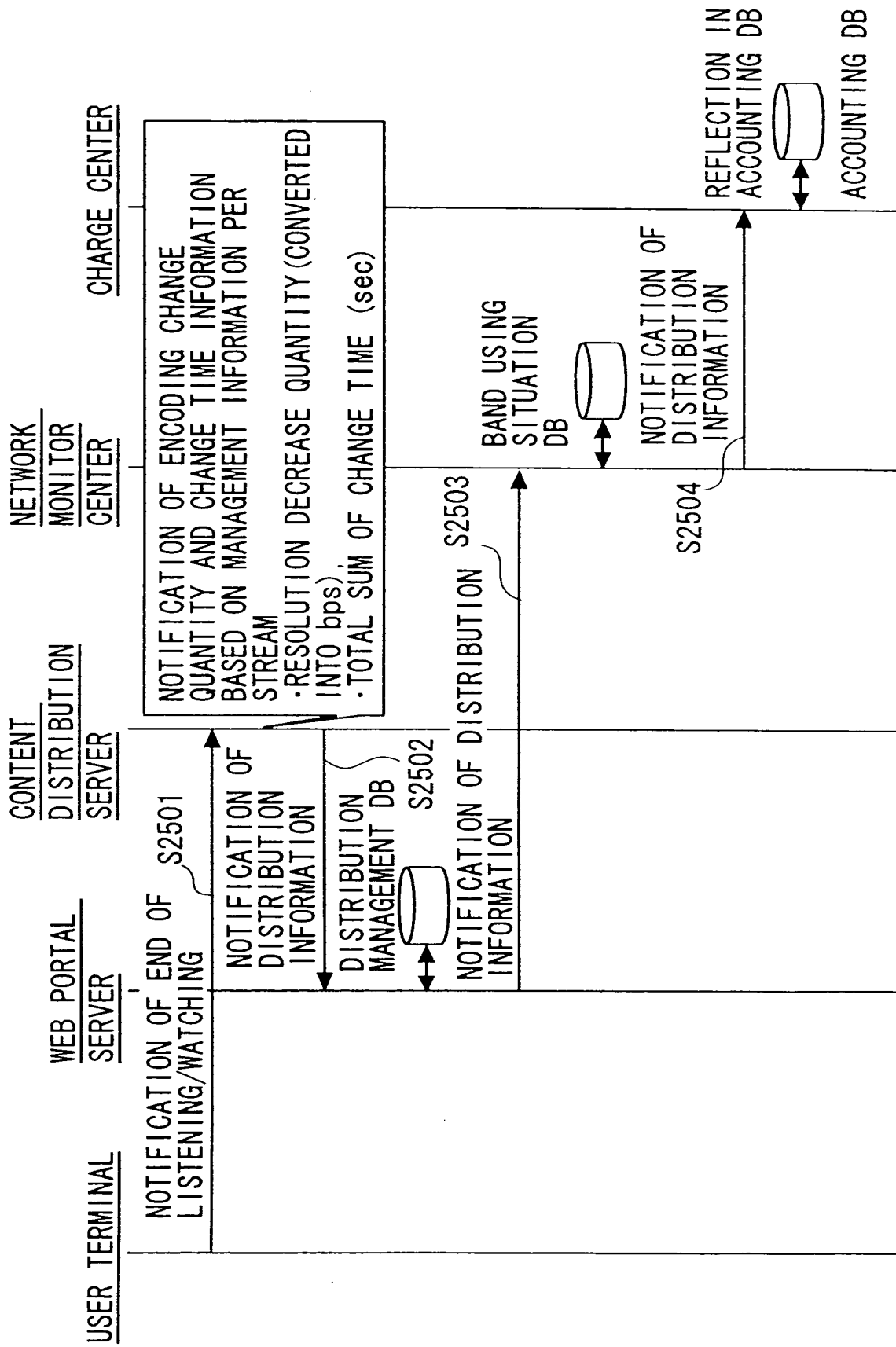


FIG. 26

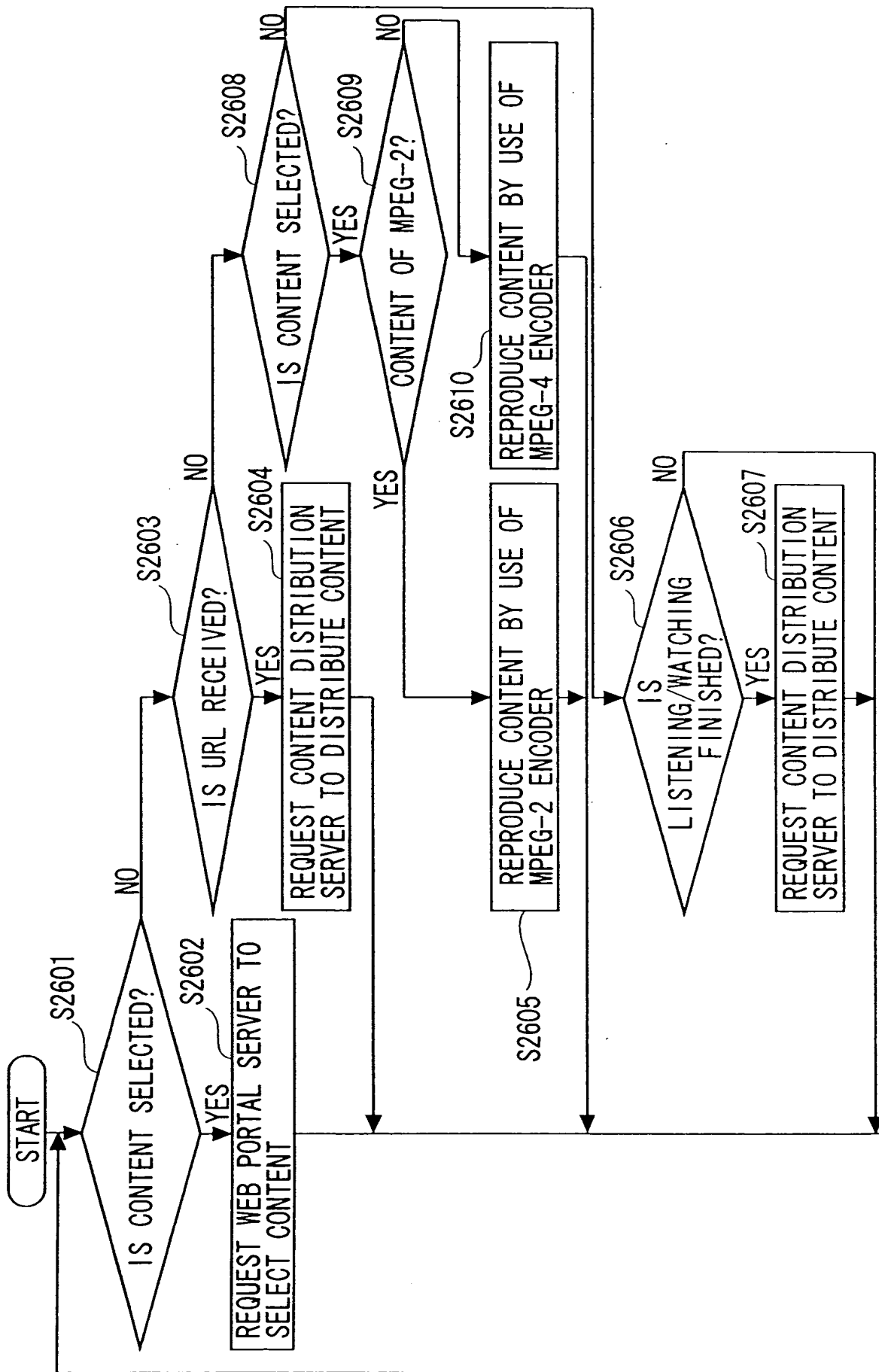


FIG. 27

